21. (Amended) The method of claim 19, wherein the low-refractive-index transparent thin film is deposited after all of the high-refractive-index thin film is deposited.

REMARKS

Applicant concurrently files herewith a Petition and fee for a One-month Extension of Time.

This Amendment amends claims 16-17 and 20-21. Claims 13-22 are pending. Claims 13 and 14 are independent.

Attached hereto is a marked-up version of the changes made to the claims by the current Amendment. The attached page is captioned "**Version with markings to show changes made.**" Applicants note that the amendments are made only to more particularly point out the invention for the Examiner and not for narrowing the scope of the claims or for any reason related to a statutory requirement for patentability.

Entry of this §1.116 Amendment is proper. Since the Amendments above narrow the issues for appeal and since such features and their distinctions over the prior art of record were discussed earlier, such amendments do not raise a new issue requiring a further search and/or consideration by the Examiner. As such, entry of this Amendment is believed proper and Applicants earnestly solicit entry. No new matter has been added.

Applicants also note that, notwithstanding any claim amendments herein or later during prosecution, that Applicants' intent is to encompass equivalents of all claim elements.

The Office Action objects to the drawing corrections submitted on April 29, 2002. This Amendment includes a Request for Approval of Drawing Corrections which requests approval of numerical values to the reflectivity axis of Fig. 3 in accordance with Examiner

Markham's helpful suggestion. Applicants respectfully request approval of the proposed drawing correction.

I. THE CLAIMED INVENTION

Applicant's invention, as disclosed and claimed, is directed to a transparent laminate having n thin-film units laminated unit by unit successively on a surface of a substrate, and a high-refractive-index transparent thin film deposited on a surface of the laminate of the n thin-film units. Each of the n thin-film units includes a high-refractive-index thin film and a silver transparent conductive film. When the silver transparent conductive thin films are deposited by a vacuum dry process, the temperature T(K) of the transparent substrate at the time of film deposition is in the range of 340 to 410 K, whereby the transparent laminate has a standard deviation of visible light transmittance which is not larger than 5% in a wave range of from 450 to 650 nm.

This configuration has a reduced wavelength dependence of visible light transmittance so that the laminate can exhibit the color tone of neutral gray without the addition of any absorbent such as a dye. The laminate also has transmittance which is high enough over the entire visible light range and can satisfy all the properties such as electromagnetic wave shielding, near-infrared cutting, visible light low-reflectance, etc. as required of a PDP film in spite of the simple structure. Moreover, the invention provides a light-weight thin PDP filter of good visibility.

II. THE 35 U.S.C. §112 REJECTIONS

The Office Action rejects claims 16-18 and 20-22 under 35 U.S.C. § 112, second paragraph. This Amendment amends claims 16-17 and 20-21 in accordance with Examiner Markham's helpful suggestions.

With respect to claims 18 and 22, the Office Action asserts that "it is unclear whether or not another active method step is required." Applicants respectfully submit that one of ordinary skill in the art understands that the additional method step is the forming of a plasma display filter with the transparent laminate. Applicant respectfully requests withdrawal of this rejection.

The Office Action rejects claims 13-22 under 35 U.S.C. §112, first paragraph. Applicants respectfully traverse this rejection.

The Office Action asserts that the subject matter recited in the claims was not described in the specification as to reasonably convey to one of ordinary skill in the art that the inventor had possession of the claimed invention at the time the application was filed. In particular, the Office Action asserts that the claims now cover at least three combination thin film layers which is open to an unlimited number of combination thin film layers is "new matter."

While the Applicants agree that the claims now cover an unlimited number of combination thin film layers, Applicants respectfully submit that the specification as filed includes support for this subject matter. In particular, the specification provides support for this recitation at, for example, page 14, line 25 through page 15, line 3. While the specification shows exemplary embodiments of only three combination thin film layers, one of ordinary skill in the art at the time of the invention would have understood that four

combination thin film layers are acceptable and that more than four combination film layers are possible. Although the specification states that it would be difficult to obtain a desired result with more than four combination film layers, the specification does not indicate that the invention is limited to less than five combination film layers. Applicants respectfully submit that the specification provides support for more than four combination film layers and that the specification does not state that the invention does not cover more than four combination film layers. Applicants respectfully request withdrawal of this rejection.

III. THE APPLIED REFERENCES

The Office action rejects claims 13, 15 and 17-18 under 35 U.S.C. § 103(a) over Anzaki et al.; claim 16 under 35 U.S.C. § 103(a) over Anzaki et al. in view of Okamura et al.; claims 14, 19 and 21-22 under 35 U.S.C. § 103(a) over Anzaki et al. in view of Noreika et al. and either Nulman or Shiroishi et al.; claims 13 and 15-18 under 35 U.S.C. § 103(a) over Okamura et al. in view of Kenzo et al.; and claims 14 and 19-22 under 35 U.S.C. § 103(a) over Okamura et al. in view of Kenzo et al. in further view of Noreika et al. and either Nulman or Shiroishi. Applicants respectfully traverse these rejections.

None of the applied references teaches or suggests the features of independent claims 13 and 14 including: 1) depositing a silver transparent conductive thin film when a temperature of the transparent substrate at the time of deposition is within a range of 340 to 410 k (claim 13); 2) depositing a silver transparent conductive thin film when a temperature of the transparent substrate at the time of deposition is within a range of 340 to 390 k (claim 14); and 3) a deposition rate of the silver transparent conductive thin film of $R = (1/40)x(T-300)\pm0.5$ (claim 14).

Rather, as pointed out by Examiner Markham, Anzaki et al. teaches heating the substrate to a temperature of 573k or lower during the silver film formation and Kenzo et al. teaches performing a sputtering process at a substrate temperature between room temperature (about 296k) to 180 C (453 K). While the ranges disclosed in the applied references overlap the ranges set forth in claims 13 and 14, none of the applied references teach or suggest the criticality of the claimed temperature ranges. Applicants can rebut a prima facie case of obviousness based on overlapping ranges by showing the criticality of the claimed range (M.P.E.P. 2144.05(III)).

The specification of the present application explains the problems associated with having the substrate temperature too high or too low. "Generally, when the temperature of the substrate is high, aggregation is apt to occur in the inside of the thin film. As a result, each of islands is shaped like a sphere, so that it is difficult to form a continuous structure even in the case where the thickness of the thin film is relatively large." (page 5, lines 13-18 emphasis added). This can cause abnormal light absorption called surface plasma resonance absorption, and in the case of a silver transparent conductive thin film, the electromagnetic wave shielding function cannot be fulfilled sufficiently because electric resistance in the direction of width of the film is remarkably reduced as well as visible light transmittance in a certain wave range. (page 5, line 23 - page 6, line 8). When the deposition rate is high, the thin film may easily be formed as a continuous structure. However, when this deposition rate is heightened, dependence on transmittance of wavelengths is so large that the transparent laminate cannot exhibit the color tone of neutral gray thought visible light transmittance is improved overall. (page 5, line 18 - page 6, line 13).

The specification explains that the inventors discovered that, when the temperature of the substrate and the deposition rate of the silver transparent are controlled within the claimed ranges, delicate light absorption different from the aforementioned general surface plasma resonance absorption occurs. As a result, wavelength dependence of visible light transmittance is reduced so that the transparent laminate can exhibit the color tone of neutral gray without addition of any absorbent such as a dye into the transparent substrate. (page 6, line 14 - page 7, line 4). Moreover, the specification explains that transparent laminate produced as recited in claims 13 and 14 has transmittance kept sufficiently high with respect to the whole visible light range and can satisfy all properties such as electromagnetic wave shielding property, near-infrared cutting property, visible light low-reflecting property, etc. required of a PDP film in spite of the simple structure of the claimed transparent laminate. (page 7, lines 5-11). The specification also explains that the inventors found that a light-weight thin PDP filter of good visibility having the aforementioned properties can be obtained using the claimed transparent laminate. (page 7, lines 11-14).

The specification also explains that with the use of the claimed invention is significant in achieving a more delicate light absorption as compared with the light absorption of a conventional silver transparent conductive thin film. (page 17, lines 18-23). The specification explains the problems associated with having a temperature which is too high or too low (page 17, line 23 - page 18, line 24). Additionally, the specification sets forth specific results of sample produced at temperatures below (333k for sample 5 and 303 k for sample 6) and above (413 k for both samples 7 and 8) the claimed ranges showing the unsuitability of the samples which were produced outside of the claimed ranges and, thus, the criticality of these ranges. (page 25, line 12 - page 33, line 7). Applicants respectfully submit

that the specification sets forth adequate evidence of the criticality of the claimed ranges and that this criticality is not taught or suggested in the applied reference. Applicants respectfully request withdrawal of these rejections and hereby rebut a prima facie case of obviousness based on overlapping ranges by showing the criticality of the claimed ranges.

The Office Action agrees that a prima facie case of non-obviousness may be overcome by establishing criticality. However, the Office Action asserts that the claims are not commensurate in scope with the evidence supporting the claims. In particular, the Office Action points out that acceptable samples were produced using temperatures ranging from 353 K to 403 K and that unacceptable samples were produced using temperature of 303 K and 333 K. The Office Action questions why 340 K is being asserted as the critical low-end cutoff point given these results and wonders how the Applicant knows that temperatures between 340 K to 353 K give the desired results. Given these questions, the Office Action concludes that the showing of criticality is not commensurate in scope with the claims. Applicants respectfully submit that the results are commensurate in scope with the claims.

Applicants cannot be expected to conduct thousands of tests to determine an exact point at which unexpected results occur. Rather, Applicants conducted a reasonable number of tests and determined that a sample produced at a temperature of 333 K was unacceptable while a sample produced at a temperature of 353 K was acceptable. With this knowledge, Applicants picked a number between 333 K and 353 K within which it is known that a transition from unacceptable to acceptable results occur. The number picked was 340 K which Applicants respectfully submit is commensurate in scope to the range between 333 K and 353 K within which the transition occurs.

Indeed, the M.P.E.P. provides an example which supports this view. In section 716.02(d) the M.P.E.P. gives an example where tests demonstrated acceptable results

occurred at 110 C and 130 C, while the prior art disclosed a temperature of 60 C. In that example, claim 8 recited a temperature of 100 C which is somewhere between the 110 C and 60 C range within which a transition from unacceptable to acceptable results occur. Applicants respectfully submit that as long as Applicants claim some point within a range where such a transition occurs, that such claim scope is commensurate in scope with the evidence offered to support the claim of criticality.

The Office Action also points out that the claims recite any vacuum dry process, while the specification shows that the samples were obtained using a sputtering process. Applicants respectfully submit that it is irrelevant whether or not the claim scope is broader ("not commensurate in scope") than the processes described in the specification. Applicants have never argued that a sputtering process was critical to obtaining the advantages (or unexpected results) provided by the invention. Rather, the specification respectfully fully complies with the requirement of 35 U.S.C. § 112 by providing a description of an exemplary process by which the invention may be achieved.

Similarly, while the Office Action asserts that the claims are not "commensurate in scope" with the specification by being open to a number of silver containing films because the specification describes specific examples of silver containing films, Applicants again respectfully submit that this is not relevant to patentability. Applicants have never argued that the particular silver-containing film was critical to obtaining the advantages (or unexpected results) provided by the invention. Rather, the specification fully complies with the requirement of 35 U.S.C. § 112 by providing a description of an exemplary process by which the invention may be achieved. Applicants respectfully request withdrawal of these rejections.

III. FORMAL MATTERS AND CONCLUSION

In view of the foregoing amendments and remarks, Applicants respectfully submit that the Application is in condition for allowance. Applicants respectfully request prompt reconsideration and allowance.

Should the Examiner believe that anything further is desirable to place the application into condition for allowance, Applicants invite the Examiner to contact the undersigned attorney at the telephone number listed below.

The Commissioner is hereby authorized to charge any deficiency in fees or to credit any overpayment in fees to Attorney's Deposit Account No. 50-0481.

Respectfully Submitted,

Date: 11/8/02

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the claims:

Please amend claims 16-17 and 20-21 as follows:

16. (Amended) The method of claim 15, wherein the low-refractive-index transparent thin film is deposited before [the] any high-refractive-index thin film [depositing] is deposited.

17. (Amended) The method of claim 15, wherein the low-refractive-index transparent thin film is deposited after all of the high-refractive-index thin film [depositing] is deposited.

20. (Amended) The method of claim 19, wherein the low-refractive-index transparent thin film is deposited before [the] any high-refractive-index thin film [depositing] is deposited.

21. (Amended) The method of claim 19, wherein the low-refractive-index transparent thin film is deposited after all of the high-refractive-index thin film [depositing] is deposited.